NATIONAL GUIDELINE CLEARINGHOUSE™ (NGC) GUIDELINE SYNTHESIS

ASSESSMENT AND MANAGEMENT OF OBESITY AND OVERWEIGHT IN ADULTS

GUIDELINES BEING COMPARED

1. **American College of Physicians (ACP)**. Pharmacologic and surgical management of obesity in primary care: a clinical practice guideline from the American College of Physicians. Ann Intern Med. 2005 Apr 5;142(7):525-31. [43 references]
2. **National Collaborating Centre for Primary Care/National Institute for Health and Clinical Excellence (NCCPC/NICE)**. Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children. London (UK): National Institute for Health and Clinical Excellence; 2006 Dec. 2590 p.
3. **Department of Veterans Affairs, Department of Defense (VA/DoD)**. VA/DoD clinical practice guideline for screening and management of overweight and obesity. Washington (DC): Department of Veterans Affairs, Department of Defense; 2006. 117 p.

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AREAS OF AGREEMENT AND DIFFERENCE

A direct comparison of the recommendations presented in the above guidelines for the assessment and management of obesity and overweight in adults is provided below.

Areas of Agreement

Evaluation/Diagnosis

The NCCPC/NICE and VA/DoD guidelines are in general agreement that measurement of BMI, defined as weight in kilograms/height in meters^2 (kg/m^2), is the most reliable and valid method for gauging overweight and obesity in adults. BMI is also well correlated with degree of risk for obesity-related complications, such as cardiovascular disease. Both NCCPC/NICE and VA/DoD refer to the same scheme for classification of overweight and obesity: a BMI of 25.0 to 29.9 is classified as overweight; obesity is categorized as Class I (BMI 30 to 34.9), Class II (BMI 35 to 39.9), and Class III (BMI >40). NCCPC/NICE cautions that BMI needs to be interpreted with caution in certain groups, including highly muscular adults, Asians, and older people. The importance of waist circumference as an indicator of cardiovascular and other disease risk is also emphasized by NCCPC/NICE and VA/DoD. The groups agree that a waist circumference of >88 cm (35 inches) in women and >102 cm (40 inches) in men is very high and indicates increased risk, independent of BMI.

Assessment

The two guidelines that provide recommendations on assessment, NCCPC/NICE and VA/DoD, recommend a clinical assessment be performed, which should include a basic medical history, physical examination, and laboratory tests as indicated. The clinical assessment should screen for comorbid conditions, particularly obesity-related health risks. Other factors to be evaluated include the patient's history of obesity, previous weight-loss attempts, and lifestyle factors, such as dietary and exercise habits.

Both groups also recommend patients undergo a social and psychological assessment to identify behavioral health conditions, such as depression and binge eating, which may affect the success of therapy. There is also agreement that patient motivation to lose weight should be evaluated before initiating therapy.

Treatment Strategy

The groups that provide specific recommendations, NCCPC/NICE and VA/DoD, agree that weight loss programs should be multifaceted and combine dietary interventions, physical activity, and behavioral modification strategies. Both groups emphasize that interventions should be selected according to the patient's risk level (based on BMI and waist circumference), the potential to gain health benefits, and patient preferences. NCCPC/NICE and VA/DoD agree that the patient and the clinical team together should reach conclusions on the goals of therapy and preferred treatment plan, and that the treatment plan should be documented in the medical record. Recommendations regarding weight loss goals are similar, with NCCPC/NICE recommending a 5 to 10% loss of original weight, and VA/DoD noting that a 10% weight loss is a reasonable initial goal. The groups agree that the patient's partner/spouse and family should participate in and support any

weight loss program. There is also agreement that the patient and their families and/or carers should be educated on a number of relevant topics, including the nature of overweight and obesity, treatment options, prognosis, length and frequency of therapy, and the distinction between losing weight and maintaining weight loss.

Dietary Interventions

The two groups that provide specific recommendations, NCCPC/NICE and VA/DoD, recommend that any dietary regimen intended to promote weight loss create a caloric deficit of 600 kcal/day and 500-1000 kcal/day, respectively. NCCPC/NICE also cites low-fat diets as an appropriate dietary regimen for sustainable weight loss, noting that either option should be used in combination with expert support and intensive follow-up.

LCDs (1000-1200 kcal/day for women; 1,200 to 1,600 kcal/day for men) are cited by both groups as a dietary option, with NCCPC/NICE noting that they are less likely to be nutritionally complete and VA/DoD similarly stating that they should include the major nutrients in appropriate proportions. VA/DoD also states that low-fat intake (20 to 30 percent of total calories/day), as part of LCDs, can be recommended to induce weight loss and should be recommended for patients with cardiovascular disease or lipid abnormalities.

Both groups also address VLCDs, which NCCPC/NICE classifies as less than 1000 kcal/day. VA/DoD acknowledges a lack of standardization of commonly used terms, such as VLCDs, and notes that it is the beyond the scope of its guideline to determine standardized macronutrient measures and calories to be applied as definitions for each diet. In terms of the groups' recommendations, NCCPC/NICE states that VLCDs may be used for a maximum of 12 weeks continuously, or intermittently with a LCD, by people who are obese and have reached a plateau in weight loss. VA/DoD recommends against VLCDs that restrict calories to less than 800 kcal/day for weight loss, but notes that they may be used short term (12 to 16 weeks) under medical supervision.

Physical Activity

There is overall agreement that physical activity should be one of the primary components of any weight loss program. The groups that provide specific recommendations, NCCPC/NICE and VA/DoD, agree that physical activity be recommended not only to promote weight loss but also for the other health benefits it can bring, such as improved cardiovascular outcomes. Both groups recommend that moderate levels of physical activity should be performed a minimum of 30 minutes most days of the week, and that the activity can be in one session or several lasting 10 minutes or more. NCCPC/NICE also notes that people who have been obese and have lost weight should be advised they may need to do 60-90 minutes of activity a day to avoid regaining weight. Both groups agree that both structured, supervised exercise programs as well as home fitness activities that can be incorporated into everyday life are effective physical activity interventions.

Pharmacotherapy

There is overall agreement that pharmacologic therapy should only be considered for patients who have not achieved their weight loss goals through dietary, activity and behavioral changes. All of the groups agree that the use of pharmacotherapy should generally be reserved for obese patients (BMI >30 kg/m^2). NCCPC/NICE and VA/DoD further agree that pharmacotherapy can also be considered for adults with a lower BMI who also have obesity-related comorbidities (VA/DoD recommends BMI >27 kg/m^2; NCCPC/NICE specifies 28.0 kg/m^2 for orlistat and 27 kg/m^2 for sibutramine). All groups emphasize that drug therapy should be used only in combination with a reduced-calorie diet, increased exercise, and behavioral interventions.

There is overall agreement that patients should be regularly evaluated to monitor the effect of drug treatment and adherence to lifestyle and behavioral interventions. Recommendations from NCCPC/NICE and VA/DoD regarding duration of treatment are similar, with NCCPC/NICE recommending a 3-month follow-up. They state that therapy with orlistat or sibutramine should be continued beyond 3 months only if the person has lost at least 5% of their initial body weight since starting drug treatment. VA/DoD makes the same recommendation for orlistat, but recommends a 1-month follow-up for sibutramine, noting that patients who have lost an average of 1 pound or more per week during the first 4 weeks of therapy with sibutramine should continue treatment, barring any intolerable side effects. Alternately, VA/DoD continues, patients who fail to lose 4 pounds after 4 weeks treated with sibutramine should have their adherence assessed and, if appropriate, an increase in the dose for an additional 4-week trial. Refer to Areas of Difference for more information.

Both NCCPC/NICE and VA/DoD note the potential adverse effect on blood pressure and heart that sibutramine can cause, and recommend it be prescribed with caution and the patient is closely monitored for these effects.

Bariatric Surgery

There is overall agreement that clinicians should discuss with patients who are candidates for bariatric surgery (and their families as appropriate) the benefits and potential risks of bariatric procedures. The groups further agree that bariatric surgery should be reserved for patients with extreme obesity (generally BMI >40) who have failed to control weight by other means and who remain at high risk of medical comorbidities. NCCPC/NICE and VA/DoD agree that surgery can also be considered for adults with a BMI of 35 kg/m^2 or more with one or more obesity-associated chronic health conditions. NCCPC/NICE also recommends bariatric surgery as a first-line option (instead of lifestyle interventions or drug treatment) for adults with a BMI of more than 50 kg/m^2 in whom surgical intervention is considered appropriate.

ACP recommends that patients be referred to high-volume centers with surgeons experienced in the surgical procedures. With regard to selecting a specific procedure, VA/DoD specifies that RYGB is the bariatric procedure with the most robust evidence for inducing sustained weight loss for patients with BMI greater than 40 kg/m^2. NCCPC/NICE recommends that the choice of surgical intervention be made jointly by the patient and clinician, taking into account the degree of obesity, comorbidities, evidence on effectiveness and long-term effects, facilities and equipment available, and the surgeon's experience. There is overall

agreement that lifelong medical follow-up after surgery is necessary to monitor adherence to treatment, adverse effects and complications, dietary restrictions, and behavioral health.

Areas of Difference

Pharmacotherapy

Guidance regarding specific medications recommended for pharmacotherapy differ somewhat. ACP cites sibutramine, orlistat, phentermine, diethylpropion, fluoxetine, and bupropion as options, adding that there are no data to determine whether one drug is more efficacious than another. NCCPC/NICE and VA/DoD, in contrast, assert that the drugs with the widest efficacy and safety data are orlistat and sibutramine. With regard to other medications recommended by ACP, phentermine and diethylpropion are acknowledged to have short-term efficacy by VA/DoD. Neither NCCPC/NICE nor VA/DoD address bupropion.

With regard to duration of treatment, ACP asserts that there are no long-term (>12 months) studies of efficacy or safety to inform the decision to continue treatment beyond 1 year and that the decision to continue should be a shared discussion between the physician and patient. VA/DoD, however, states that sibutramine and orlistat may be considered as a component of weight maintenance programs for up to 2 years and 4 years, respectively. According to NCCPC/NICE, treatment with sibutramine is not currently recommended beyond the licensed duration of 12 months. With regard to orlistat, NCCPC/NICE states that the decision to use orlistat for longer than 12 months (usually for weight maintenance) should be made after discussing potential benefits and limitations with the patient.

COMPARISON OF RECOMMENDATIONS	
EVALUATION/DIAGNOSIS **Abbreviations** **Back to TOC**	
ACP (2005)	No recommendations offered.
NCCPC/NICE (2006)	**Identification and Classification of Overweight and Obesity** Healthcare professionals should use their clinical judgement to decide when to measure a person's height and weight. Opportunities include registration with a general practice, consultation for related conditions (such as type 2 diabetes and cardiovascular disease) and other routine health checks.

Measures of Overweight or Obesity

Adults

- BMI should be used as a measure of overweight in adults, but needs to be interpreted with caution because it is not a direct measure of adiposity.
- Waist circumference may be used, in addition to BMI, in people with a BMI less than 35 kg/m^2.

Adults and Children

- Bioimpedance is not recommended as a substitute for BMI as a measure of general adiposity.

Classification of Overweight or Obesity

Adults

- The degree of overweight or obesity in adults should be defined as follows.

Classification	BMI (kg/m^2)
Healthy weight	18.5-24.9
Overweight	25-29.9
Obesity I	30-34.9
Obesity II	35-39.9
Obesity III	40 or more

- BMI may be a less accurate measure of adiposity in adults who are highly muscular, so BMI should be interpreted with caution in this group. Some other population groups, such as Asians and older people, have comorbidity risk factors that would be of concern at different BMIs (lower for Asian adults and higher for older people). Healthcare professionals should use clinical judgement when considering risk factors in these groups, even in people not classified as overweight or obese using the classification in recommendation 1.2.2.7 of the full version of the original guideline document.
- Assessment of the health risks associated with overweight and obesity in adults should be based on BMI and waist

	circumference as demonstrated in recommendation 1.2.2.7 of the original guideline document. • Adults should be given information about their classification of clinical obesity and the impact this has on risk factors for developing other long-term health problems. • The level of intervention to discuss with the patient initially should be based as demonstrated in recommendation 1.2.2.11 in the original guideline document.
VA/DoD (2006)	**Obtain Height and Weight; Calculate BMI** *Recommendations* Adult patients should have their BMI calculated from their height and weight to establish a diagnosis of overweight or obesity. **[B]** Obese patients (BMI >30 kg/m^2) should be offered weight loss treatment. **[B]** Overweight patients (BMI between 25 and 29.9 kg/m^2) or patients with increased waist circumference (>40 inches for men; >35 inches for women) should be assessed for the presence of obesity-associated conditions that are directly influenced by weight, to determine the benefit they might receive from weight loss treatment. **[B]** **Obtain Waist Circumference Measurement** *Recommendations* For screening purposes, waist circumference should be obtained in patients with a BMI <30 kg/m^2 as a predictor of disease risk. **[C]** The waist circumference measurement should be made with a tape measure placed above the iliac crest and wrapped in a horizontal fashion around the individual's abdomen at the end of a normal expiration. Gender-specific cut-offs should be used as indicators of increased waist circumference. **[C]** • Men: waist circumference >40 inches (102 cm) • Women: waist circumference >35 inches (88 cm)

Assessment

ACP (2005)	No recommendations offered.
NCCPC/NICE (2006)	**Assessment** This section should be read in conjunction with the NICE guideline on eating disorders (NICE clinical guideline no. 9; available from www.nice.org.uk/CG009), particularly if a person who is not overweight asks for advice on losing weight. *Adults and Children* • After making an initial assessment (see specific recommendations below in this section under "Adults" and "Children"), healthcare professionals should use clinical judgement to investigate comorbidities and other factors in an appropriate level of detail, depending on the person, the timing of the assessment, the degree of overweight or obesity and the results of previous assessments. • Any comorbidities should be managed when they are identified, rather than waiting until the person has lost weight. • People who are not yet ready to change should be offered the chance to return for further consultations when they are ready to discuss their weight again and willing or able to make lifestyle changes. They should also be given information on the benefits of losing weight, healthy eating and increased physical activity. • Surprise, anger, denial or disbelief may diminish people's ability or willingness to change. Stressing that obesity is a clinical term with specific health implications, rather than a question of how you look, may help to mitigate this. During the consultation it would be helpful to: • Assess the person's view of their weight and the diagnosis, and possible reasons for weight gain • Explore eating patterns and physical activity levels • Explore any beliefs about eating and physical activity and weight gain that are unhelpful if the person wants to lose weight • Be aware that people from certain ethnic and socioeconomic backgrounds may be at greater risk of obesity, and may have different beliefs about

	what is a healthy weight and different attitudes towards weight management • Find out what the patient has already tried and how successful this has been, and what they learned from the experience • Assess readiness to adopt changes • Assess confidence in making changes • Patients and their families and/or carers should be given information on the reasons for tests, how the tests are performed and their results and meaning. • If necessary, another consultation should be offered to fully explore the options for treatment or discuss test results. *Adults* • After appropriate measurements have been taken and the issues of weight raised with the person, an assessment should be done, covering: • Presenting symptoms and underlying causes of overweight and obesity • Eating behaviour • Comorbidities (such as type 2 diabetes, hypertension, cardiovascular disease, osteoarthritis, dyslipidaemia and sleep apnoea) and risk factors, using the following tests - lipid profile, blood glucose (both preferably fasting) and blood pressure measurement • Lifestyle - diet and physical activity • Psychosocial distress and lifestyle, environmental, social and family factors - including family history of overweight and obesity and comorbidities • Willingness and motivation to change • Potential of weight loss to improve health • Psychological problems • Medical problems and medication • Referral to specialist care should be considered if: • The underlying causes of overweight and obesity need to be assessed • The person has complex disease states and/or needs that cannot be managed adequately in either primary or secondary care • Conventional treatment has failed in primary or secondary care • Drug therapy is being considered for a person with a BMI more than 50 kg/m^2 • Specialist interventions (such as a very-low-calorie diet for extended periods) may be needed • Surgery is being considered

VA/DoD (2006)	**Obtain Medical History, Physical Examination, and Laboratory Tests as Indicated** The clinical assessment of the overweight or obese patient should be done by the primary care provider. The assessment should include a basic medical history, a relevant physical examination, and laboratory tests as clinically indicated. The history should include age of onset or periods of rapid increase in body weight, precipitating factors, and maximum lifetime weight. **[Expert Opinion]** The clinical assessment should rule out organic and drug related causes and identify health risks and/or the presence of weight-related conditions. **[Expert Opinion]** In addition to a medical assessment, a social and psychological assessment may be indicated to identify barriers to participating in dietary or physical activity programs. The assessment may also include screening for behavioral health conditions that may hinder successful weight loss (i.e., depression, post-traumatic stress disorder, anxiety, bipolar disorder, addictions, binge eating disorder, bulimia, and alcoholism). **[Expert Opinion]** A nutritional evaluation should include an assessment of current intake as well as the use of supplements, herbs, and over-the-counter weight loss aides. In addition, meal and snack patterns and problem eating behaviors need to be assessed. The weight and dieting history should include the age of onset of weight gain, number and types of diets and attempts, possible triggers of weight gains and losses, and range of weight change. **[Expert Opinion]** Current levels of physical activity and sedentary lifestyle should be assessed, including exercise frequency, duration, and intensity as well as the patient's motivation to increase physical activity. **[Expert Opinion]** **Assess Patient's Readiness to Lose Weight** Readiness to lose weight should be assessed by direct inquiry. Those indicating an adequate readiness to lose weight (preparation or action stage) should proceed to treatment. Those not yet ready to lose weight (precontemplation or contemplation stage) should receive motivational counseling. **[Expert Opinion]**
Treatment Strategy	
ACP	No recommendations offered.

(2005)	
NCCPC/NICE (2006)	**<u>Generic Principles of Care</u>** *Adults and Children* • Regular, non-discriminatory long-term follow-up by a trained professional should be offered. Continuity of care in the multidisciplinary team should be ensured through good record keeping. *Adults* • Any specialist setting should be equipped for treating people who are severely obese with, for example, special seating and adequate weighing and monitoring equipment. Hospitals should have access to specialist equipment – such as larger scanners and beds – needed when providing general care for people who are severely obese. • The choice of any intervention for weight management must be made through negotiation between the person and their health professional. • The components of the planned weight-management programme should be tailored to the person's preferences, initial fitness, health status and lifestyle. **<u>Lifestyle Interventions</u>** The recommendations in this section deal with lifestyle changes for people actively trying to lose weight; recommendations about lifestyle changes and self-management strategies for people wishing to maintain a healthy weight can be found in section 1.1.1 of the full version of the original guideline document. **General** *Adults and Children* • Multicomponent interventions are the treatment of choice. Weight management programmes should include behaviour change strategies to increase people's physical activity levels or decrease inactivity, improve eating behaviour and the quality of the person's diet and reduce energy intake. • When choosing treatments, the following factors should be considered: • The person's individual preference and social circumstance and the experience and outcome of

	previous treatments (including whether there were any barriers) • Their level of risk, based on BMI and waist circumference • Any comorbidities • The results of the discussion should be documented, and a copy of the agreed goals and actions should be kept by the person and the healthcare professional or put in the notes as appropriate. Healthcare professionals should tailor support to meet the person's needs over the long term. • The level of support offered should be determined by the person's needs, and be responsive to changes over time. • Any healthcare professional involved in the delivery of interventions for weight management should have relevant competencies and have undergone specific training. • Information should be provided in formats and languages that are suited to the person. When talking to patients and carers, healthcare professionals should use every day, jargon-free language and explain any technical terms. Consideration should be given to the person's: • Age and stage of life • Gender • Cultural needs and sensitivities • Ethnicity • Social and economic circumstances • Physical and mental disabilities • To encourage the patient through the difficult process of changing established behaviour, healthcare professionals should praise successes – however small – at every opportunity. • People who are overweight or obese, and their families and/or carers, should be given relevant information on: • Overweight and obesity in general, including related health risks • Realistic targets for weight loss; for adults the targets are usually maximum weekly weight loss of 0.5-1 kg* • Aim to lose 5-10% of original weight • The distinction between losing weight and maintaining weight loss, and the importance of developing skills for both; the change from losing weight to maintenance typically happens after 6-9 months of treatment • Realistic targets for outcomes other than weight loss, such as increased physical activity, healthier eating • Diagnosis and treatment options • Healthy eating in general (see appendix D in the full version of the original guideline document)

	• Medication and side effects • Surgical treatments • Self care • Voluntary organisations and support groups and how to contact them *Based on the British Dietetic Association 'Weight Wise' Campaign. Greater rates of weight loss may be appropriate in some cases, but this should be undertaken only under expert supervision. There should be adequate time in the consultation to provide information and answer questions. • If a person (or their family or carers) does not want to do anything at this time, healthcare professionals should explain that advice and support will be available in the future whenever they need it. Contact details should be provided, so that the person can make contact when they are ready. *Adults* • The person's partner or spouse should be encouraged to support any weight management programme. • The level of intensity of the intervention should be based on the level of risk and the potential to gain health benefits.
VA/DoD (2006)	**Reach Shared Decisions About Goals and Treatment Plan** The clinical team, together with the patient, should reach shared decisions regarding the treatment program. **[Expert Opinion]** • The clinical team should convey to the patient that obesity is a chronic disease that will require lifelong treatment • The clinical team should suggest the personalized preferred treatment options based on disease risk and patient characteristics (e.g., describe to the patient/caregiver the treatment options, including behavioral modification, diet and activity patterns, prognosis, estimated length and frequency of therapy, and expectations) • The patient should describe his or her needs, preferences, and resources and assist the team in determining the optimal environment for therapy and preferred interventions

- The patient and the clinical team together should reach conclusions on the goals of therapy and preferred treatment plan

The patient's family/caregiver may participate in the treatment process and should be involved in assisting the patient with changing lifestyle, diet and physical activity patterns. **[Expert Opinion]**

A detailed treatment plan needs to be documented in the medical record to provide integrated care. **[Expert Opinion]**

Initiate Interventions Based on Risk Level and Patient Preferences

Weight loss therapy should be tailored to risk level based on calculated BMI and based upon the balance of benefits and risks and patient preferences. **[C]**

Patients who may benefit from weight loss should be offered interventions to improve their diet, increase exercise, and change related behaviors to promote weight loss. **[A]**

Weight loss interventions should combine dietary therapy, increased physical activity, and behavioral modification strategies rather than utilizing one intervention alone. **[A]**

A reasonable initial goal of weight loss therapy (intervention) is a 10 percent reduction in body weight. **[B]**

Drug therapy in combination with a reduced-calorie diet and exercise interventions should be considered for obese patients (BMI $\geq$30 kg/m^2) or overweight patients (BMI $\geq$27 kg/m^2) with an obesity-associated chronic health condition (i.e., hypertension, type 2 diabetes, dyslipidemia, metabolic syndrome, and sleep apnea). **[B]**

Bariatric surgery to reduce body weight, improve obesity-associated comorbidities, and improve quality of life may be considered in adult patients with a BMI >40 kg/m^2 and those with a BMI >35 kg/m^2 with at least one obesity-associated chronic health condition (i.e., hypertension, type 2 diabetes, dyslipidemia, metabolic syndrome, and sleep apnea). **[B]**

There is insufficient evidence to recommend drug or surgical interventions specifically for patients who have documented CAD. **[I]** However, there is good evidence that drug and surgical weight loss interventions may improve cardiovascular risk factors, such as hypertension, dyslipidemia, and diabetes

	mellitus. **[A]** There is insufficient evidence to recommend drug or surgical interventions specifically for patients who have DJD. However, physical activity and diet may improve physical function and chronic pain in patients with DJD. **[I]**
Dietary Interventions	
ACP (2005)	Clinicians should counsel all obese patients (defined as those with a body mass index [BMI] $\geq$30 kg/m^2) on lifestyle and behavioral modifications such as appropriate diet and exercise, and the patient's goals for weight loss should be individually determined (these goals may encompass not only weight loss but also other parameters, such as decreasing blood pressure or fasting blood glucose levels).
NCCPC/NICE (2006)	**Dietary Advice** *Adults and Children* • Dietary changes should be individualised, tailored to food preferences and allow for flexible approaches to reducing calorie intake. • Unduly restrictive and nutritionally unbalanced diets should not be used, because they are ineffective in the long term and can be harmful. • People should be encouraged to improve their diet even if they do not lose weight, because there can be other health benefits. *Adults* • The main requirement of a dietary approach to weight loss is that total energy intake should be less than energy expenditure. • Diets that have a 600 kcal/day deficit (that is, they contain 600 kcal less than the person needs to stay the same weight) or that reduce calories by lowering the fat content (low-fat diets), in combination with expert support and intensive follow-up, are recommended for sustainable weight loss. • LCDs (1000-1600 kcal/day) may also be considered, but are less likely to be nutritionally complete. • VLCDs (less than 1000 kcal/day) may be used for a maximum of 12 weeks continuously, or intermittently with a low-calorie diet (for example for 2-4 days a week), by people who are obese and have reached a plateau in weight loss. • Any diet of less than 600 kcal/day should be used only

	under clinical supervision. • In the longer term, people should move towards eating a balanced diet, consistent with other healthy eating advice.
VA/DoD (2006)	**Diet Therapy** *Recommendations* Weight Loss Dietary interventions should be individually planned, in conjunction with physical activity, to create a caloric deficit of 500 to 1,000 kcal/day. Such negative energy balance may lead to a weight loss of 1 to 2 pounds per week. **[B]** Selection of Specific Diets Dietary programs should at a minimum reduce the usual caloric intake by 500 to 1,000 kcal/day to achieve modest weight loss. **[B]** LCDs should generally include 1,000 to 1,200 kcal/day for women and 1,200 to 1,600 kcal/day for men and should include the major nutrients in appropriate proportions (see Appendix C, Table C-1 in the original guideline document). **[B]** VLCDs that restrict calories to less than 800 kcal/day [15 kcal/kg ideal body weight] are not recommended for weight loss, but may be used short term (12 to 16 weeks) under medical supervision. **[B]** Low-fat intake (20 to 30 percent of total calories/day), as part of LCDs, can be recommended to induce weight loss and should be recommended for patients with cardiovascular disease or lipid abnormalities. **[B]** Low-carbohydrate diets (less than 20 percent of total calories) may be used for short-term weight loss, but are not recommended for long-term dieting or weight maintenance. **[B]** Low-carbohydrate diets can be recommended to reduce serum triglyceride levels for overweight patients with mixed dyslipidemia. **[B]** Low-carbohydrate diets are not recommended for patients with hepatic or renal disease or for patients with diabetes who

	are unable to monitor blood glucose. **[C]** LCDs or VLCDs may include meal replacements (e.g., bars and shakes). **[A]** There is insufficient evidence to recommend for or against a diet limited to foods with a glycemic index less than 55 as a means of producing weight loss. **[C]** <u>Commercial Diets</u> Patients should be encouraged to adhere to a specific diet, as adherence to any diet plan from a variety of programs (e.g., Atkins, Ornish, Weight Watchers, and Zone) has been shown to be the most important factor in achieving weight reduction. **[B]**
Physical Activity	
ACP (2005)	Clinicians should counsel all obese patients (defined as those with a body mass index [BMI] $\geq$30 kg/m^2) on lifestyle and behavioral modifications such as appropriate diet and exercise, and the patient's goals for weight loss should be individually determined (these goals may encompass not only weight loss but also other parameters, such as decreasing blood pressure or fasting blood glucose levels).
NCCPC/NICE (2006)	**Physical Activity** *Adults* • Adults should be encouraged to increase their physical activity even if they do not lose weight as a result, because of the other health benefits physical activity can bring, such as reduced risk of type 2 diabetes and cardiovascular disease. Adults should be encouraged to do at least 30 minutes of at least moderate-intensity physical activity on 5 or more days a week. The activity can be in one session or several lasting 10 minutes or more. • To prevent obesity, most people should be advised they may need to do 45-60 minutes of moderate-intensity activity a day, particularly if they do not reduce their energy intake. People who have been obese and have lost weight should be advised they may need to do 60-90 minutes of activity a day to avoid regaining weight. • Adults should be encouraged to build up to the recommended levels for weight maintenance, using a managed approach with agreed goals. • Recommended types of physical activity include: • Activities that can be incorporated into everyday

	life, such as brisk walking, gardening or cycling • Supervised exercise programmes • Other activities, such as swimming, aiming to walk a certain number of steps each day, or stair climbing • Any activity should take into account the person's current physical fitness and ability. • People should also be encouraged to reduce the amount of time they spend inactive, such as watching television or using a computer.
VA/DoD (2006)	**Physical Activity** *Recommendations* Weight loss interventions should include exercise to promote weight loss **[A]**, maintain weight loss **[A]**, decrease abdominal obesity **[B]**, improve cardiovascular fitness **[A]**, improve cardiovascular outcomes **[A]**, and decrease all-cause and cardiovascular mortality **[B]**. Home fitness/lifestyle activities or structured supervised programs may be effectively used to produce a caloric expenditure leading to weight loss. **[A]** Moderate levels of physical activity should be performed at least 30 minutes most days of the week. **[B]** Physical activity may include short intermittent bursts (10 minutes or longer) as well as longer continuous exercise. **[A]**
Behavior Modification	
ACP (2005)	No recommendations offered.
NCCPC/NICE (2006)	**Behavioural Interventions** *Adults and Children* • Any behavioural intervention should be delivered with the support of an appropriately trained professional. *Adults* • Behavioural interventions for adults should include the following strategies, as appropriate for the person: • Self monitoring of behaviour and progress

	• Stimulus control • Goal setting • Slowing rate of eating • Ensuring social support • Problem solving • Assertiveness • Cognitive restructuring (modifying thoughts) • Reinforcement of changes • Relapse prevention • Strategies for dealing with weight regain
VA/DoD (2006)	**Behavioral Modification Strategies** *Recommendations* Behavioral modification interventions to improve adherence to diet and physical activity should be given to overweight or obese individuals. **[B]** Behavioral modification interventions should be provided at a higher intensity when possible for greater effectiveness. Higher intensity is defined as more than one personal contact per month for the first three months (individual or group setting). Less frequent intervention may be an ineffective and inefficient use of manpower. **[B]** Multiple behavioral modification strategies should be used in combination for greater effectiveness. **[A]** Behavioral modification intervention should be delivered in a group format when possible rather than individually. **[B]** For individuals unable or unwilling to participate in weight loss treatment in person, telephone or internet-based behavioral modification intervention may be considered. **[B]** Behavioral modification intervention should be continued on a long-term basis to promote maintenance of weight loss. **[B]**
Pharmacotherapy	
ACP (2005)	• Pharmacologic therapy can be offered to obese patients who have failed to achieve their weight loss goals through diet and exercise alone. However, there needs to be a doctor/patient discussion of the drugs' side effects, the lack of long-term safety data, and the temporary nature of the weight loss achieved with medications before initiating therapy. • For obese patients who choose to use adjunctive drug

	therapy, options include sibutramine, orlistat, phentermine, diethylpropion, fluoxetine, and bupropion. The choice of agent will depend on the side effects profile of each drug and the patient's tolerance of those side effects. There are no data to determine whether one drug is more efficacious than another, and there is no evidence for increased weight loss with combination therapy. There are no data about weight regain after medications are withdrawn, underscoring the need for sustained lifestyle and behavioral modifications. There are no long-term (>12 months) studies of efficacy or safety to inform the decision to continue treatment beyond 1 year; thus, the decision to continue should be a shared discussion between the physician and patient.
NCCPC/NICE (2006)	**<u>Pharmacological Interventions</u>** This section contains recommendations that update the NICE technology appraisals on orlistat and sibutramine (*NICE technology appraisal guidance* no. 22 and *NICE technology appraisal guidance* no. 31); see section 6 of the full length original guideline document for details. **General: Indications and Initiation** *Adults and Children* • Pharmacological treatment should be considered only after dietary, exercise and behavioural approaches have been started and evaluated. *Adults* • Drug treatment should be considered for patients who have not reached their target weight loss or have reached a plateau on dietary, activity and behavioural changes alone. • The decision to start drug treatment, and the choice of drug, should be made after discussing with the patient the potential benefits and limitations, including the mode of action, adverse effects and monitoring requirements, and their potential impact on the patient's motivation. When drug treatment is prescribed, arrangements should be made for appropriate healthcare professionals to offer information, support and counselling on additional diet, physical activity and behavioural strategies. Information on patient support programmes should also be provided. • Prescribing should be in accordance with the drug's

summary of product characteristics.

Continued Prescribing and Withdrawal

Adults and Children

- Pharmacological treatment may be used to maintain weight loss, rather than continue to lose weight.
- If there is concern about the adequacy of micronutrient intake, a supplement providing the reference nutrient intake for all vitamins and minerals should be considered, particularly for vulnerable groups such as older people (who may be at risk of malnutrition) and young people (who need vitamins and minerals for growth and development).
- People whose drug treatment is being withdrawn should be offered support to help maintain weight loss, because their self-confidence and belief in their ability to make changes may be low if they did not reach their target weight.

Adults

- Regular review is recommended to monitor the effect of drug treatment and to reinforce lifestyle advice and adherence.
- Withdrawal of drug treatment should be considered in people who do not lose enough weight (see specific recommendations under "Orlistat" and "Sibutramine" below).
- Rates of weight loss may be slower in people with type 2 diabetes, so less strict goals than those for people without diabetes may be appropriate. These goals should be agreed with the person and reviewed regularly.

Orlistat

Adults

- Orlistat should be prescribed only as part of an overall plan for managing obesity in adults who meet one of the following criteria:
    - A BMI of 28.0 kg/m^2 or more with associated risk factors
    - A BMI of 30.0 kg/m^2 or more
- Therapy should be continued beyond 3 months only if the person has lost at least 5% of their initial body weight since starting drug treatment. (See also recommendation above for advice on targets for people with type 2 diabetes.)

	• The decision to use drug treatment for longer than 12 months (usually for weight maintenance) should be made after discussing potential benefits and limitations with the patient.
	• The coprescribing of orlistat with other drugs aimed at weight reduction is not recommended.
	
	Sibutramine
	
	Adults
	
	• Sibutramine should be prescribed only as part of an overall plan for managing obesity in adults who meet one of the following criteria:
	  • A BMI of 27.0 kg/m^2 or more and other obesity-related risk factors such as type 2 diabetes or dyslipidaemia
	  • A BMI of 30.0 kg/m^2 or more
	• Sibutramine should not be prescribed unless there are adequate arrangements for monitoring both weight loss and adverse effects (specifically pulse and blood pressure).
	• Therapy should be continued beyond 3 months only if the person has lost at least 5% of their initial body weight since starting drug treatment. (See also recommendation above for advice on targets for people with type 2 diabetes.)
	• Treatment is not currently recommended beyond the licensed duration of 12 months.
	• The coprescribing of sibutramine with other drugs aimed at weight reduction is not recommended.

VA/DoD (2006)	**Pharmacotherapy** *Recommendations* Adult patients with a BMI greater than 30 kg/m^2 or a BMI greater than 27 kg/m^2 with obesity-associated conditions may be considered for pharmacotherapy in combination with a reduced-calorie diet, increased physical activity and behavioral therapy. **[B]** Patients who do not respond to medication with a reasonable weight loss should be evaluated for adherence to the medication regimen and adjunctive therapies or considered for an adjustment of dosage. **[I]** If the patient continues to be unresponsive to the medication, or serious adverse effects occur, the use of medication should

	be discontinued. **[I]** Orlistat Orlistat may be considered to reduce body weight **[B]** and improve obesity-associated cardiovascular risk factors. **[C]** Patients who have lost 5 percent or more of their body weight after 12 weeks of treatment or lost an average of 1 pound or more per week with orlistat should continue their current treatment, as they are more likely to experience sustained weight loss. **[B]** Orlistat may be considered as a component of weight maintenance programs for up to 4 years. **[B]** Patients prescribed orlistat should take a multiple vitamin that includes fat soluble vitamins. **[Expert Opinion]** Sibutramine Sibutramine may be considered to reduce body weight **[B]** and improve glycemic and lipid parameters. **[C]** Patients who have lost an average of 1 pound or more per week during the first 4 weeks of therapy with sibutramine should continue treatment, barring any intolerable side effects. **[Expert Opinion]** Patients who fail to lose 4 pounds after 4 weeks treated with sibutramine should have their adherence assessed and, if appropriate, an increase in the dose for an additional 4-week trial. **[I]** Sibutramine may be considered as a component of weight maintenance programs for up to 2 years. **[B]** Sibutramine should be discontinued if it is not efficacious in helping the patient to lose or maintain weight loss. **[B]** Sibutramine should be used with caution as it can elevate blood pressure and heart rate. **[A]** Adult patients with uncontrolled hypertension, cardiovascular disease, or a history of myocardial infarction (MI) or stroke should not include sibutramine as a part of their weight loss program due to the increased risk of harm. **[D]** Sibutramine should be avoided in patients taking SSRIs,

	MAOIs, triptans, pseudoephedrine, and other agents that affect serotonin. **[D]**
Bariatric Surgery	
ACP (2005)	• Surgery should be considered as a treatment option for patients with a BMI of 40 kg/m^2 or greater who instituted but failed an adequate exercise and diet program (with or without adjunctive drug therapy) and who present with obesity-related comorbid conditions, such as hypertension, impaired glucose tolerance, diabetes mellitus, hyperlipidemia, and obstructive sleep apnea. A doctor/patient discussion of surgical options should include the long-term side effects, such as possible need for reoperation, gall bladder disease, and malabsorption. • Patients should be referred to high-volume centers with surgeons experienced in bariatric surgery. • Lifestyle modification through diet and exercise should always be recommended for all obese patients. In addition, patients need to be continuously educated regarding diet and exercise, and it should be clear that after a surgical procedure patients cannot resume their previous eating habits.

NCCPC/NICE (2006)	**<u>Surgical Interventions</u>**
	
	This section updates the NICE technology appraisal on surgery for people with morbid obesity (NICE technology appraisal guidance no. 46); see section 6 of the full length original guideline document for details.
	
	Adults and Children
	
	• Bariatric surgery is recommended as a treatment option for people with obesity if all of the following criteria are fulfilled:
	  • They have a BMI of 40 kg/m^2 or more, or between 35 kg/m^2 and 40 kg/m^2 and other significant disease (for example, type 2 diabetes or high blood pressure) that could be improved if they lost weight
	  • All appropriate non-surgical measures have been tried but have failed to achieve or maintain adequate, clinically beneficial weight loss for at least 6 months
	  • The person has been receiving or will receive intensive management in a specialist obesity service
	  • The person is generally fit for anaesthesia and

surgery
- The person commits to the need for long-term follow-up

See recommendations below for additional criteria to use when assessing children and adults.

- Severely obese people who are considering surgery to aid weight reduction (and their families as appropriate) should discuss in detail with the clinician responsible for their treatment (that is, the hospital specialist and/or bariatric surgeon) the potential benefits and longer-term implications of surgery, as well as the associated risks, including complications and perioperative mortality.
- The choice of surgical intervention should be made jointly by the person and the clinician, and taking into account:
  - The degree of obesity
  - Comorbidities
  - The best available evidence on effectiveness and long-term effects
  - The facilities and equipment available
  - The experience of the surgeon who would perform the operation
- Regular, specialist postoperative dietetic monitoring should be provided, and should include:
  - Information on the appropriate diet for the bariatric procedure
  - Monitoring of the person's micronutrient status
  - Information on patient support groups
  - Individualised nutritional supplementation, support and guidance to achieve long-term weight loss and weight maintenance
- Arrangements for prospective audit should be made, so that the outcomes and complications of different procedures, the impact on quality of life and nutritional status, and the effect on comorbidities can be monitored in both the short and the long term.
- The surgeon in the multidisciplinary team should:
  - Have undertaken a relevant supervised training programme
  - Have specialist experience in bariatric surgery
  - Be willing to submit data for a national clinical audit scheme

Adults

- In addition to the criteria listed in recommendation 1.2.6.1 of the full length original guideline document, bariatric surgery is also recommended as a first-line option (instead of lifestyle interventions or drug treatment) for adults with a BMI of more than 50 kg/m^2 in

	whom surgical intervention is considered appropriate.
	• In people for whom surgery is recommended as a first-line option, orlistat or sibutramine can be used to maintain or reduce weight before surgery if it is considered that the waiting time for surgery is excessive.
	• Surgery for obesity should be undertaken only by a multidisciplinary team that can provide:
	  • Preoperative assessment, including a risk-benefit analysis that includes preventing complications of obesity, and specialist assessment for eating disorder(s)
	  • Providing information on the different procedures, including potential weight loss and associated risks
	  • Regular postoperative assessment, including specialist dietetic and surgical follow-up
	  • Management of comorbidities
	  • Psychological support before and after surgery
	  • Providing information on, or access to, plastic surgery (such as apronectomy) where appropriate
	  • Access to suitable equipment, including scales, theatre tables, Zimmer frames, commodes, hoists, bed frames, pressure-relieving mattresses and seating suitable for patients undergoing bariatric surgery, and staff trained to use them
	• Surgery should be undertaken only after a comprehensive preoperative assessment of any psychological or clinical factors that may affect adherence to postoperative care requirements, such as changes to diet.
	• Revisional surgery (if the original operation has failed) should be undertaken only in specialist centres by surgeons with extensive experience because of the high rate of complications and increased mortality.

VA/DoD (2006)	**Bariatric Surgery** *Recommendations* Adult patients with extreme obesity (BMI 40 kg/m^2 or more) or severe obesity (BMI 35 kg/m^2 or more with one or more obesity-associated chronic health condition) may be considered for bariatric surgery to reduce body weight **[A]**, improve obesity-associated comorbidities **[B]**, and improve quality of life **[B]**. RYGB is recommended as the bariatric procedure with the most robust evidence for inducing sustained weight loss **[B]** for patients with BMI greater than 40 kg/m^2. There is insufficient evidence to recommend for or against the routine use of bariatric surgery in those over 65 years of age

	and patients with a substantial surgical risk. **[I]** Providers should engage all patients who are candidates for bariatric surgery in a detailed discussion of the benefits and potential risks of bariatric procedures. **[I]** Relative contraindications to bariatric surgery that are supported only by expert consensus include: • Unstable coronary artery disease, severe pulmonary disease, portal hypertension or other conditions that can compromise anesthesia or wound healing • Patients who are unable to comprehend basic principles of surgery or follow-up postoperative instructions • Patients having had multiple abdominal operations, complicated incisional hernias • Patients who have illnesses that greatly reduce life expectancy and/or are unlikely to be improved in their medical condition by surgically-induced weight reduction (e.g., cancer). Lifelong medical follow-up after surgery is necessary to monitor adherence to treatment, adverse effects and complications, dietary restrictions, and behavioral health. **[I]**
Follow-Up/Maintenance of Weight Loss	
ACP (2005)	No recommendations offered.
NCCPC/NICE (2006)	**<u>Generic Principles of Care</u>** *Adults and Children* • Regular, non-discriminatory long-term follow-up by a trained professional should be offered. Continuity of care in the multidisciplinary team should be ensured through good record keeping. **Note**: Refer to the individual sections of this Synthesis for follow-up recommendations pertaining to individual interventions.
VA/DoD (2006)	**Weight Maintenance and Follow-Up** **Is Patient Losing Weight?** Patients on diet, exercise, and behavioral therapy who have lost on average 1 to 2 pounds per week should continue with their current treatment until their weight loss goal is achieved.

[B]

Patients who have lost on average less than 1 pound per week should have their adherence to therapy assessed and treatment plan reevaluated. **[I]**

Obese patients with a BMI $\geq$30 kg/m^2, and overweight patients with a BMI $\geq$27 kg/m^2 and obesity-associated chronic health conditions who fail to achieve adequate weight loss through non-pharmacologic interventions may be candidates for pharmacotherapy with orlistat or sibutramine. **[B]**

Congratulate and Initiate Relapse Prevention/Maintenance

Patients who have met their weight loss goals or have stopped losing weight and are ready to sustain current weight loss should be offered a maintenance program consisting of diet, physical activity, and behavioral support. Weight status should be reevaluated and diet and physical activity should be adjusted so that energy balance is maintained (energy intake is equal to energy expenditure). **[B]**

Providers should continue to maintain contact with patients providing on-going support, encouragement, and close monitoring during the maintenance phase of weight loss to prevent weight regain. **[B]**

Patients who achieve their weight loss goal with a combination of medication, diet, and exercise may be considered candidates to include their medication as a component of their weight maintenance program with continued monitoring of effectiveness and adverse effects. **[B]**

Lifelong follow-up after bariatric surgery is necessary to monitor adherence to treatment, adverse effects and complications, dietary restrictions, and behavioral health. **[I]**

There is no established optimum visit length or duration between maintenance visits, but it seems reasonable to establish a minimum of quarterly follow-up (every three months) for the sustainment of weight loss and more frequently if the patient requests it. **[I]**

Assess Adherence and Modify Treatment

Adherence to weight loss programs should be assessed by periodically measuring the patient's BMI and waist circumference and providing feedback. **[Expert Opinion]**

	Patients should be encouraged to record activities by using food logs, exercise logs, and personal diaries to provide structure and allow the provider to identify compliance or relapse issues. **[B]**

STRENGTH OF EVIDENCE AND RECOMMENDATION GRADING SCHEMES **Abbreviations** **Back to TOC**	
ACP (2005)	Not applicable
NCCPC/NICE (2006)	**Levels of Evidence** **1++** High-quality meta-analyses, systematic reviews of randomized controlled trials (RCTs), or RCTs with a very low risk of bias **1+** Well-conducted meta-analyses, systematic reviews of RCTs or RCTs with a low risk of bias) **1–** Meta-analyses, systematic reviews of RCTs or RCTs with a high risk of bias[a] **2++** High-quality systematic reviews of non-RCT, case–control, cohort, controlled before-and-after study (CBA) or interrupted time series (ITS) studies High quality non-RCT, case–control, cohort, CBA or ITS studies with a very low risk of confounding, bias or chance and a high probability that the relation is causal **2+** Well-conducted non-RCT, case–control, cohort, CBA or ITS studies with a very low risk of confounding, bias or chance and a moderate probability that the relation is causal **2–** Non-RCT, case–control, cohort, CBA or ITS studies with a high risk of confounding, bias or chance and a significant risk that the relationship is not causal[a] **3** Non-analytic studies (for example, case reports, case series) **4** Expert opinion, formal consensus [a] Studies with a level of evidence '–' should not be used as a basis for making a recommendation.

VA/DoD (2006)

Evidence Rating System

Quality of Evidence (QE)

I	At least one properly done randomized controlled trial (RCT)
II-1	Well designed controlled trail without randomization
II-2	Well designed cohort or case-control analytic study, preferably from more than one source
II-3	Multiple time series evidence with/without intervention, dramatic results of uncontrolled experiment
III	Opinion of respected authorities, descriptive studies, case reports, and expert committees

Overall Quality

Good	High grade evidence (I or II-1) directly linked to health outcome
Fair	High grade evidence (I or II-1) linked to intermediate outcome; *or* Moderate grade evidence (II-2 or II-3) directly linked to health outcome
Poor	Level III evidence or no linkage of evidence to health outcome

Net Effect of the Intervention

Substantial:	More than a small relative impact on a frequent condition with a substantial burden of suffering; *or* A large impact on an infrequent condition with a significant impact on the individual patient level.
Moderate:	A small relative impact on a frequent condition with a substantial burden of suffering; *or* A moderate impact on an infrequent condition with a significant impact on the individual patient level.
Small:	A negligible relative impact on a frequent condition with a substantial burden of suffering; *or* A small impact on an infrequent condition with a

	significant impact on the individual patient level.
Zero or Negative:	Negative impact on patients; *or* No relative impact on either a frequent condition with a substantial burden of suffering, *or* an infrequent condition with a significant impact on the individual patient level.

Strength of the Recommendation

	The Net Benefit of the Intervention			
Quality of Evidence	**Substantial**	**Moderate**	**Small**	**Zero or Negative**
Good	A	B	C	D
Fair	B	B	C	D
Poor	I	I	I	I

A	A strong recommendation that the clinicians provide the intervention to eligible patients. *Good evidence was found that the intervention improves important health outcomes and concludes that benefits substantially outweigh harm.*
B	A recommendation that clinicians provide (the service) to eligible patients. *At least fair evidence was found that the intervention improves health outcomes and concludes that benefits outweigh harm.*
C	No recommendation for or against the routine provision of the intervention is made. *At least fair evidence was found that the intervention can improve health outcomes, but concludes that the balance of benefits and harms is too close to justify a general recommendation.*
D	Recommendation is made against routinely providing the intervention to asymptomatic patients. *At least fair evidence was found that the intervention is ineffective or that harms outweigh benefits.*
I	The conclusion is that the evidence is insufficient to recommend for or against routinely providing the

	intervention. *Evidence that the intervention is effective is lacking, or poor quality, or conflicting and the balance of benefits and harms cannot be determined.*

COMPARISON OF METHODOLOGY
Click on the links below for details of guideline development methodology

ACP METHODOLOGY (2005)	NCCPC/NICE METHODOLOGY (2007)	VA/DoD METHODOLOGY (2005)

All three groups performed searches of electronic databases to collect the evidence; ACP and VA/DoD also performed hand-searches of published literature (both primary and secondary sources). The ACP guideline differs from the other two in that it is based on the evidence reports and accompanying background papers developed by the Southern California Evidence-Based Practice Center (EPC).

To assess the quality and strength of the evidence, NCCPC/NICE and VA/DoD used weighting according to a rating scheme and provide the scheme. ACP, in contrast, employed expert consensus. All three groups reviewed published meta-analyses and performed a systematic review with evidence tables to analyze the evidence. ACP also performed a meta-analysis.

All three groups employed expert consensus to formulate the recommendations; NCCPC/NICE also used informal consensus. VA/DoD and NCCPC/NICE provide a description of processes used. The strength of the recommendations was graded by VA/DoD, and the scheme is provided.

With regard to cost-analyses, ACP did not perform a formal cost analysis and did not review published cost analyses. NCCPC/NICE, in contrast, carried out two separate pieces of work on the cost effectiveness of interventions in clinical and public health settings (refer to section 6 of the original guideline document). In the development of its guideline, VA/DoD reviewed published cost analyses.

Some variation of peer review was used as a method of guideline validation by all three groups and all three provide a description of the process. ACP also compared its guideline with USPSTF recommendations as a means to validate it.

SOURCE(S) OF FUNDING
Abbreviations

Back to TOC	
ACP (2005)	American College of Physicians (ACP)
NCCPC/NICE (2006)	National Institute for Health and Clinical Excellence (NICE)
VA/DoD (2006)	United States Government

BENEFITS AND HARMS Abbreviations Back to TOC	
Benefits	
ACP (2005)	Appropriate pharmacologic and surgical management of obesity in primary care
NCCPC/NICE (2006)	Appropriate assessment and management of obesity in adults and children and decrease in morbidity and mortality associated with obesity
VA/DoD (2006)	Weight loss improves blood pressure, cholesterol, glycemic control, and obstructive sleep apnea and reduces incident hypertension and type 2 diabetes. Modest weight loss among overweight and obese adults will reduce the incidence and severity of diabetes, a chronic condition that is linked to significant morbidity, mortality, and healthcare costs.
Harms	
ACP (2005)	**Side Effects of Medications** • *Sibutramine*: Modest increase in heart rate and blood pressure, nervousness, insomnia • *Phentermine*: Cardiovascular, gastrointestinal • *Diethylpropion*: Palpitations, tachycardia, insomnia, gastrointestinal • *Orlistat*: Diarrhea, flatulence, bloating, abdominal pain, dyspepsia • *Bupropion*: Paresthesia, insomnia, central nervous system effects • *Fluoxetine*: Agitation, nervousness, gastrointestinal

	Surgery • Mortality • Surgical complications
NCCPC/NICE (2006)	• Adverse effects of pharmacological therapy • Complications associated with surgery
VA/DoD (2006)	• Continuing a VLCD for a long period may not be safe. • Potential adverse effects and precautions for drug therapy used in dyslipidemia are provided in Table F-1 in Appendix F of the original guideline document. • There are significant drug or nutrient interactions with anti-obesity agents. See Table F-3 in Appendix F in the original guideline document for a list of known drug interactions to date. • Bariatric surgery may be associated with stricture of gastrojejunostomy, gastrointestinal bleeding, marginal ulcer, bowel obstruction, and complications of the LapBand. See Appendix G of the original guideline document for details.

CONTRAINDICATIONS Abbreviations Back to TOC	
ACP (2005)	Not applicable
NCCPC/NICE (2006)	Not applicable
VA/DoD (2006)	• Low-carbohydrate diets are contraindicated in patients with renal or hepatic disease and patients with diabetes that cannot monitor their blood sugars. • The use of sibutramine with a MAOI is contraindicated. • Sibutramine is contraindicated in patients with uncontrolled hypertension and in patients who have a major eating disorder (anorexia nervosa or bulimia nervosa). • Women who are pregnant or who are considering pregnancy in the next two years should not be considered candidates for bariatric surgery. • Relative contraindications to bariatric surgery that are supported only by expert consensus include:

	• Unstable coronary artery disease, severe pulmonary disease, portal hypertension or other conditions that can compromise anesthesia or wound healing • Patients who are unable to comprehend basic principles of surgery or follow-up postoperative instructions • Patients having had multiple abdominal operations, complicated incisional hernias • Patients who have illnesses that greatly reduce life expectancy and/or are unlikely to be improved in their medical condition by surgically-induced weight reduction (e.g., cancer).

Abbreviations
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ACP, American College of Physicians

BMI, body mass index

CAD, coronary artery disease

DJD, degenerative joint disease

DoD, Department of Defense

LCD, low calorie diet

MAOI, monoamine oxidase inhibitors

NCCPC/NICE, National Collaborating Centre for Primary Care/National Institute for Health and Clinical Excellence

NHLBI, National Heart, Lung, and Blood Institute

RYGB, Roux-en-y Gastric Bypass

SSRI, selective serotonin reuptake inhibitors

USPSTF, United States Preventive Services Task Force

VHA, Veterans Health Administration

VLCD, very low calorie diet

WHO, World Health Organization

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